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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention.  
Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

**Title of Invention:** AUTOMATED BANKING MACHINE APPARATUS AND SYSTEM

**Inventors** (please provide full names): DRUMMOND, JAY PAUL; BLACKSON, DALE; CICHON, BOB A.; ESS, JOSEPH C.; MOALES, MARK A.; WEIS, DAVID W.; SMITH, MARK D.; CHURCH, JAMES.

**Earliest Priority Filing Date:** 11/27/96

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

The invention concerns a banking machine (ATM) that runs software (a browser) capable of reading documents or pages of a language such as HTML or other mark up language from a network and in response to accessing such documents the sheet dispenser of the ATM operates to dispense an output through an output device of the ATM. The received HTML documents contain a dispense instruction which causes the sheet dispenser to operate. Other HTML documents or pages can contain additional instructions which function to control or operate additional transaction function devices of the ATM machine.

- **NOTE THE ATTACHED DOCUMENT THE REFERS TO FICS AND THEIR BROWER EQUIPPED ATM DEMONSTRATED AT THE SIBOS CONFERENCE IN ITALY IN OCTOBER 1996. I NEED EARLIER DISCLOSURE OF THE FICS WEB BROWSING ATM IF POSSIBLE. I COULD NOT FIND ANY ADDITIONAL INFORMATION.**

**Some suggested search terms:**

ATM, ABM, AUTOMATED TELLER MACHINE, AUTOMATED BANKING MACHINE ETC

BROWSER, NETSCAPE, EXPLORER, MOSAIC, HTML, HTTP, MARKUP,

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4/9/82 (Item 4 from file: 268)

DIALOG(R) File 268:Banking Information Source  
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00302175 (THIS IS THE FULLTEXT)

Java goes full circle

Anonymous

Bank Technology News, v9, n12, p9-10, Dec 1996

DOCUMENT TYPE: Journal Article ARTICLE TYPE: News ISSN: 1060-3506

JOURNAL CODE: BBTN LANGUAGE: English RECORD TYPE: Abstract Fulltext

WORD COUNT: 00903

ABSTRACT: Developers are coming back full circle to Sun Microsystems Inc.'s original plan for programming language, **Java** : applications for the nontraditional device. NCR Corp. will debut **automated teller machines** (ATM) and kiosks incorporating **Java** applets at the Bank Administration Institute's Retail Delivery Systems show in December 1996. **FICS** already has demonstrated a prototype set of **Java** applets on a browser-equipped ATM at SIBOS in Florence, Italy. **Java** is also popping up in many smart card applications, as well. As is the case with ATMs, **Java** brings platform independence to the smart card business, a much needed improvement given that there are at least a dozen different smart card protocols.

TEXT:

Sun Microsystems' programming language, **Java**, was originally intended to run on nontraditional devices, from TV set-top boxes and smart phones to microwave ovens. But the rise of the Internet and intranet drew Sun's attention, and the network and the PC quickly became the main sandbox for **Java** to play in. Now, developers are coming back full circle to the original plan: applications for the nontraditional device. Among the first wave are two prototypes of **Java** applets for ATMs and another for smart cards.

Look for Dayton, OH-based NCR Corp. to debut ATMs and kiosks incorporating **Java** applets at the Bank Administration Institute's Retail Delivery Systems show this month. And **FICS**, an eight-year-old financial software company in Brussels, already has demonstrated a prototype set of **Java** applets on a browser-equipped ATM at SIBOS in Florence, Italy, in October. **FICS** is installing browsers in ATMs manufactured by Groupe Bull, Paris.

Etienne Castiaux, research and development manager at **FICS**, explains the value of using **Java** in ATMs. "If all your ATMs are connected to a TCP/IP-compliant network, you can download functions to all the machines, even if you have different types of ATMs running on different platforms." The **Java**-coded functionality that **FICS** has developed includes the ability to read the magnetic stripe of a card, perform bill payments, retrieve balance and statement information and run advertisements incorporating full audio and video.

The strategy makes for cheaper IT development. "You can more easily upgrade an ATM to a multimedia kiosk, complete with videoconferencing,"

Castiaux explains. "And you can use the same objects on the ATM that you use for your Web site, so your Web site is more like an ATM for the home and vice versa." Such an approach "standardizes the user interface," making for a more consistent marketing message, explains Castiaux. A bank could even offer the ability to access the bank's Web site via the Internet or allow access to the entire Web from the ATM and charge fees for the service

Ed Bachelder, director of Dove Associates in Boston, notes that this approach could bring one-on-one marketing to a whole new level. Since **Java** consumes less bandwidth than other programming languages, new information could be sent from the central server to ATMs faster than ever. ATMs could cross sell products to customers based on which transactions they performed

on the telephone ten minutes ago, or on the Internet last night. FICS announced plans to develop a similar set of functions in Microsoft's Active X language. But since only

Microsoft browsers and operating systems can read Active X (for now), the Microsoft Internet Explorer browsers would need to be installed in the ATM. The applets would be stored on the ATM's PC-based operating system, as opposed to on the server, as in the Java paradigm.

#### ATMs on intranets

At NCR, Java-enabled browsers on ATMs are clearly one small piece of a larger strategy. "We're going to use intranet technology across the whole range of NCR solutions," explains Derek Waugh, NCR's product manager for self-service networking products. NCR is putting a massive database on a centralized server that ATMs will be able to access via an intranet data warehouse configuration (See "Web Warehouses Bring Data To Life," October 1996 BTN). The database will hold information on customer activities, across all banking channels.

Java applets residing on this central server will be distributed to consumers' PCs, the Internet, ATMs and kiosks. "ATMs and kiosks will be able to videoconference with call centers, and cross into more traditional retailing, like selling tickets for theater and football," says Waugh. These applets will provide one-on-one marketing of the bank's products, all with a consistent view.

#### Smarter cards

Java is popping up in many smart card applications, as well. As is the case with ATMs, Java brings platform independence to the smart card business, a much needed improvement given that there are at least a dozen different smart card protocols. Java will be used in a new card called CyberFlex from Schlumberger, to be piloted early next year. And Visa International has said it will use the protocol for a subsequent version of Visa Cash, its smart card pilot.

Explains Tom Ledsack, director of marketing and business development for Schlumberger Smart Card and Systems North America, Morristown, NJ, "Applets can reside on the smart card and on the server. You could design your applet to be downloaded from a network to any smart card or computer and it could be readily upgradable in the field." The small size of applets also holds great promise for multiple application cards, by allowing for more information to be planted into the processor chips.

Some say that Java applets may not be Visa and MasterCard's best friend. "Visa and MasterCard's main source of revenue is providing authorizations through their proprietary networks," points out Jerome Svigals, an electronic banking consultant in Redwood City, CA. With Java applets in smart cards, "I can do authorizations over any medium, like the telephone or the Internet." This could take a bite out of the card associations' bread and butter.

FICS is also writing Java applets so that ATMs can read Proton smart cards, a product developed by Banksys in Brussels. "We are also doing something with Proton for a major association based in the U.S." says Castiaux, who would not reveal the identity of the card association. Watch out as well for announcements of point-of-sale terminals incorporating Java.

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#### COMPANY NAMES:

Sun Microsystems Inc DUNS:01-304-4532 TICKER:SUNW

CLASSIFICATION: 8100 (CN=Financial services industry); 5240 (CN=Software & systems); 9190 (CN=United States)

DESCRIPTORS: Java; Systems development; Bank automation; Automated teller machines; Kiosks; Smart cards; Intranets

GEOGRAPHIC NAMES: US

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**U.S. Bancorp, Microsoft Paving New Roads to \*On-Line Banking**  
American Banker - February 16, 1996; Pg. 10A\ ; Vol. 161, No. 31  
SECTION HEADING: Future Banking  
ARTICLE TYPE: Feature Article  
WORD COUNT: 1,458

BYLINE:

By KAREN EPPER

CAPTION:

Parker, Gates Gundotrs, photo

TEXT:

Half a decade ago, when many bankers were reeling from failures in home banking services, a few hardy souls in the Pacific Northwest decided to place their bets on a new wave in personal computing.

Deep within U.S. Bancorp in Portland, Ore., Linda Parker seized on the PC as a key "access technology" for the future.

But rather than trying to go it alone, as was the tendency among major banks, U.S. Bancorp teamed with Microsoft Corp., which had been looking for new outlets for its newly created Money personal finance software. Microsoft's support eased the path both technologically and financially.

"The systems development cost is very low, and that would be true for any bank as a result of partnering with a technology company," said Ms. Parker, now senior vice president and manager of emerging delivery services.

"If you're going to have a first base coach, (Microsoft) would be your choice," said Phoebe Simpson, an analyst with Jupiter Communications Co., a New York-based research firm.

And so was born one of the most pivotal and influential and at times controversial inter-industry partnerships in financial services. But now the bank and the software company are going it one better.

U.S. Bancorp is using Microsoft's Internet development tools, code-named "Blackbird," to build a completely network-based bank branch.

The project, unveiled at the Bank Administration Institute's Retail Delivery Conference in December, caught the attention of industry onlookers and marked an important next step in electronic banking services.

It goes beyond simply using software as a pipeline to basic ATM-like services. Instead, it aspires to make a full-service branch available in the home through the PC including the option of a live teller through two-way, full-motion video giving customers access to everything "except maybe safe deposit boxes," Ms. Parker joked.

Customers would enter the on-line bank through an Internet browser. They then would be able to apply for and check various accounts (not just basic savings and checking), download cash and make deposits. In this model,

Microsoft executives have said, the personal finance software would serve as no more than a "filing cabinet" for financial information.

"The vision is that the customer would be able to do everything on-line that they can now do in a branch," Ms. Parker said. "And that's much broader than what traditionally has been delivered over an automated teller machine or telephone. The PC has much greater capabilities."

Indeed, banking over the Internet itself seems to be where the industry is heading. And some are already there.

Cardinal Bancshares of Lexington, Ky., set up an entirely "virtual" bank on the Net, Security First Network Bank. In conjunction with its system developer, Five Paces Software Inc., the bank plans to license its security technology to other banks, including investors Wachovia Corp. and Huntington Bancshares Inc.

More than 100 financial institutions have already established some sort of beachhead on the Internet's vast World Wide Web. But few Web sites offer more than stale marketing pitches or much in the way of interactivity.

More comprehensive offerings like those promised through Security First and U.S. Bank of Oregon could make home banking appeal to more of a mass

market, not just the computer-owning sophisticates who use personal finance software like Money and its market-leading rival, Intuit Inc.'s Quicken.

"There is a segment of people who like to track things they keep track of their expenses, they make budgets, they monitor their bank balances very closely those are the people using Money and Quicken software," Ms. Parker said.

"We believe there's another, larger segment of customers who don't want to track things that closely, but they still have a need to be organized. The virtual branch is a way to do on-line banking, but they don't have to use personal finance software."

Richard Comandich, another senior vice president at U.S. Bank in the electronic access area, put it simply: "This is going to dwarf the use of personal finance software."

And that's saying a lot, given U.S. Bank's success so far with software-based home banking.

More than 7,500 U.S. Bank customers do some amount of banking on-line most through Money, which the bank has been promoting for two years. (Its Quicken service has been available only for a few months.)

In a poll of close to 20% of those customers, released in early January, 85% said the service met their expectations, 88% preferred it to more conventional means, and 95% would recommend it to friends. Not too shabby for a service that many banks are still working the kinks out of.

Matt Cone, product manager for Microsoft Money, said many banks "still view this as a pilot, whereas U.S. Bank sees this as mainstream." Indeed, U.S.

Bank was one of the original three banks with First Chicago Corp. and Michigan National Corp. to test a Money-based banking service three years ago.

Last year, U.S. Bank was also the first to announce its intention to offer similar access through Quicken.

U.S. Bank is Microsoft's "most visible," if not its closest, banking partner, according to Mr. Cone. Even when bankers cried foul about Microsoft's potential to take electronic customer relationships away from retail banks, U.S. Bank remained one of its staunchest supporters.

At the Retail Delivery Conference in Atlanta, Ms. Parker even took the stage with Microsoft chairman Bill Gates, during his keynote speech, to demonstrate the companies' PC system and on-line bank prototype. As Ms. Parker and another Microsoft executive walked the audience through the developments, their presentation underlined the close ties between the bank and the software company.

To some industry observers, U.S. Bank and Microsoft may be too close for comfort.

"It seems they've thrown themselves full-force at Microsoft's plans," said Ms. Simpson of Jupiter Communications. She said the bank's glowing testimonials hold little water if Microsoft provides their only on-line outlet.

"They really need to be wary of not being seen as a Microsoft puppet," she added.

Nonetheless, the relationship has provided Microsoft an eager and credible partner, willing to ride the wave of electronic financial services even when it was at low tide.

Meanwhile, U.S. Bank has broadened its customer base by establishing the kind of pioneering reputation that plays well in the Northwest, which is also Microsoft's home. Ms. Parker said the bank has spent as much if not more on marketing home banking as it has on the systems to run it. But the road to the virtual branch of the future will be neither smooth nor uncrowded.

While many observers were intrigued by the jointly developed virtual branch, at least one analyst was "underwhelmed."

Other than spotlighting Microsoft's Blackbird tools before their public release, David Weisman, an analyst with Cambridge, Mass. Research said, Forrester said, "There was nothing new there." With Sun Microsystems Inc.'s Java programming language already sweeping the nascent market for Internet building and being used by a number of banks it may be tough even for Microsoft to craft something truly new and different.

Others cautioned that U.S. Bank will have to step a little more lively if

it hopes to stay ahead of the competition from other banks. The bank also needs to carry its marketing successes over to profits.

"Traditionally (U.S. Bank) has been a leader in retail banking technology," said Tom Brown, a senior analyst with Donaldson, Lufkin, Jenrette, "but that has yet to translate into superior results in retail banking."

To the bank's credit, the on-line branch development was only two months along at the time of the conference, according to Ms. Parker. And U.S. Bank executives have become painfully aware of the many "hairy issues" they need to contend with on individual and industry levels, Mr. Comandich said, from regulatory constraints to security costs, systems integration, and fee-setting.

"You need to look at incentive pricing," he said.

"If banks just build other channels, and customers still use the same old channels and only adjust to the new ones incrementally, then banks are just adding to their costs."

U.S. Bank seems to have been beaten to that punch by Citicorp, which had set the tone for incentive pricing by dropping many service fees to its home banking customers.

But just like the Internet itself, the business of on-line banking has a long way to go. In sharing the burden, U.S. Bank seems to have made a name for itself, as well as a viable service for its customers, without making costly mistakes.

Whether it can sustain its leading-edge position \*remains to be seen. But it would not be a safe bet to count out the bank that was there before others were ready to \*start it up.

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COMPANY NAMES (DIALOG GENERATED): Bank Administration Institute ; Citicorp ; Delivery Conference ; Donaldson ; Five Paces Software Inc ; Huntington Bancshares Inc ; Intuit Inc ; Jupiter Communications Co ; Microsoft Corp ; Microsoft Money ; Net ; Retail Delivery Conference ; Security First Network Bank ; U S Bancorp ; U S Bank ; Wachovia Corp  
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DIALOG(R) File 636:Gale Group Newsletter DB(TM)  
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03185333 Supplier Number: 46523940 (THIS IS THE FULLTEXT)

**SUN TOUTS ONE-BROWSER THEORY**

Retail Delivery Systems News, v1, n14, pN/A

July 5, 1996

ISSN: 1086-2137

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 536

**TEXT:**

With its Java programming language, Sun Microsystems, of Mountain View, Calif., claims banks can cut maintenance and operations costs while delivering the most advanced services over any delivery channel.

The company is focusing efforts on Internet applications with the Java programming language that is expected to allow banks to support only one browser for any access device.

Banks using Java can maintain their brands and deliver a similar look through PC banking, the teller platform, call center, automated teller machines and kiosks, says Rob Theis, corporate director for Sun's financial services group.

Sun is onto the future of computing with Java, which can allow banks to maintain only one Internet channel to many devices, says Bill Burnham of New York-based Booz Allen & Hamilton in New York: "I buy into it but it's down the road."

**Java's Advantage**

Java is unique in that it can run on any platform and does not require a lot of processing power on the PC or workstation, Theis said.

A Java applet can reside in a browser and reach out to the designated server for the program needed at the time. The process is transparent to the user, Theis says.

In this scenario, client computers are less powerful and can be maintained from a central site, reducing operations costs, Theis said. For example, upgrading your customers' PC banking program only requires downloading software from the main server site onto all of the customers' computers. The same would apply to new call center programs. "This is a major breakthrough in computing," Theis added.

Sun's strategy will depend on two elements, according to Gina Sockolow, an analyst with First Albany of New York, who recently wrote a research report on the company. Its immediate success will rest on its ability to complete its new product cycle and move customers onto its operating system, Solaris 2.51.

Additionally, Sun needs to convince software vendors to write more programs for Sun systems, and in Java rather than for its main competitors IBM and Hewlett-Packard because banks shop for software first and then ask the provider which system the software will operate on best, Sockolow said.

It was a breakthrough for Sun when software giant Redmond, Wash.-based Microsoft announced that it will support Java. However, Tim Sloan, a director with the Aberdeen Group, in Boston, warns that Microsoft may try to make Java its own. (Bill Burnham, Booz, Allen, 212/697-1900; Gina Sockolow, First Albany, 212/916-1400.)

**Sun Microsystems at a Glance**

2550 Garcia Ave.

Mountain View, Calif. 94043-1100

<http://www.sun.com>

Contact: Rob Theis, corporate director, financial services group.

Revenue: \$5.9 billion in 1995; estimated \$7.1 billion in 1996.

Financial Industry Sales: \$495 million in 1994.

Market Share: In 1993, 55 percent of the U.S. economic and financial modeling applications were from Sun.

Products: Sparc processing chip, Solaris operating system and Java.

Founded: 1982

Customers: About a dozen banks are developing Java applications.

While it serves many industries, the banking market made up the largest portion of Sun's 1994 sales. More than 500 financial institutions are Sun hardware customers including AT&T Universal Card, Bank One, Citibank, Chemical, First Union, Visa Interactive. Source: RDSN

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PUBLISHER NAME: Phillips Business Information, Inc.

INDUSTRY NAMES: BANK (Banking, Finance and Accounting); BUSN (Any type of business)

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DIALOG(R) File 630: Los Angeles Times

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**\*Trade\*--\*It\*--\*Yourself\* \*Bank\* \*Machines\* Make a Debut**  
**Securities: Citibank is first to offer full-scale brokerage services at ATM machines. Option comes to California next month.**

Los Angeles Times (LT) - THURSDAY October 6, 1994

By: From Times Staff and Wire Reports

Edition: Home Edition Section: Business Page: 1 Pt. D Col. 5

Word Count: 419

TEXT:

Now there's another reason to stand in line at the automated teller machine: to buy and sell stocks without getting a broker's pitch.

Marking a new level of competition in the securities industry, Citibank said Wednesday that its brokerage customers in New York, Chicago and Miami can now use its automated teller machines to buy and sell stocks, get market values for securities and trade shares of the bank's Landmark money market funds. California customers will be linked to the brokerage option by the end of the month.

Customers will pay the same fees they do when buying stocks other ways.

Citibank, a unit of the nation's largest banking company, Citicorp, said it is the first bank to offer full-scale brokerage services on automatic bank machines, although both Citicorp and San Francisco-based Wells Fargo have allowed customers to use ATMs to buy and sell proprietary mutual funds. Other banks have allowed customers to check balances in brokerage accounts.

The Wells Fargo service isn't getting much use, according to Dudley Nigg, an executive vice president who oversees Wells Fargo's ATM system. Wells chose not to provide stock quotes and other trading options on the machines because the bank was concerned that ATM lines would be clogged with customers checking stock prices--a concern parroted by some analysts.

"I wouldn't want to get in a line behind someone with a large portfolio," Dean Witter Reynolds analyst Paul Mackey joked.

But Citibank is not concerned. Such problems did not materialize during the company's summer pilot program, says Citicorp spokeswoman Maria Rullo. And the bank limits customers to 10 stock quotes per day, she adds.

The Citibank system pivots on specially designed automated teller machines that have separate "menus" for banking and brokerage services. Customers who want to access their stock account will select a button that says "brokerage services: Not FDIC insured."

The screen offers a choice between information or trading. If you choose to trade, the next screen is a full-page of disclosure about stock market risks.

Those who just want to check stock prices will pull up a picture of a typewriter keyboard. By touching the screen, they can type in the name of the company or its ticker symbol and get a real-time stock quote or the previous day's mutual fund closing price. There is no charge for getting

quotes. However, customers who choose to trade through the system will pay the same brokerage fees that they'd pay if they were doing a transaction in person or over the phone.

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